

Tilapia deckerti

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, June 2015

Photo not available.

1 Native Range, and Status in the United States

Native Range

From Froese and Pauly (2015):

“Africa: endemic to Lake Ejagham, Cameroon [Stiassny et al. 2008].”

Status in the United States

This species has not been reported in the U.S.

Means of Introductions in the United States

This species has not been reported in the U.S.

Remarks

From Moelants (2010):

“Critically Endangered ... The species is endemic to Lake Ejagham (0,5 km²). The species is currently major threat is from oil plantations and slash and burn agriculture leading to sedimentation and pollution in the lake (one location). There is also a potential threat from the lake 'burping' - CO₂ (as in Lake Nyos and Lake Barombi-Mbo). In addition deforestation of the surroundings of the crater may cause more wind which could lead to the lake 'turning', as the lake is stratified, lower layer being very low in oxygen and high in organic matter. Higher winds may cause currents in the lake which could cause this lower layer to mix with the upper layer where the fish live. This would cause a massive decrease in oxygen in the water and kills the fish.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2015):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata

Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Tilapia*
Species *Tilapia deckerti* Thys van den Audenaerde, 1967”

“Taxonomic Status: valid”

Size, Weight, and Age Range

From Froese and Pauly (2015):

“Max length : 20.0 cm TL male/unsexed; [Teugels and Thys van den Audenaerde 1991]”

Environment

From Froese and Pauly (2015):

“Freshwater; demersal.”

Climate/Range

From Froese and Pauly (2015):

“Tropical”

Distribution Outside the United States

Native

From Moelants (2010):

“Cameroon”

Introduced

No introductions have been reported for this species.

Means of Introduction Outside the United States

No introductions have been reported for this species.

Short description

From Froese and Pauly (2015):

“Dorsal spines (total): 15 - 16; Dorsal soft rays (total): 11-12; Anal spines: 3; Anal soft rays: 8 - 9. Diagnosis: dorsal fin with 15-16 spines and 11-12 soft rays; anal fin with 3 spines and 8-9 soft rays; 29-30 scales in lateral line; 9-11 rakers on lower limb of the first arch 9-11 [Stiassny et al. 2008].”

Biology

From Dunz and Schliewen (2010):

“Breeds in shallow water above 2 m water depth (Schliewen et al. 2001), where pairs excavate shallow pits often close to stones, branches or similar structures. Due to difficulties in differentiation between juveniles and subadults of *T. deckerti* and *T. nigrans* spec. nov. in the field, estimates of habitat choice of non-breeding fishes are not available, although the general impression is that *T. deckerti* is restricted to more shallow areas above 4 to 6 m depth.”

Human uses

No information available.

Diseases

No OIE-notifiable diseases have been reported for this species.

Threat to humans

From Froese and Pauly (2015):

“Harmless”

3 Impacts of Introductions

No introductions of this species have been reported.

4 Global Distribution



Figure 1. Global distribution of *T. deckerti*. Map from GBIF (2015).

5 Distribution within the United States

This species has not been reported in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous U.S., reflected in a Climate 6 proportion of 0.0. The range for a low climate match is 0.000 to 0.005.

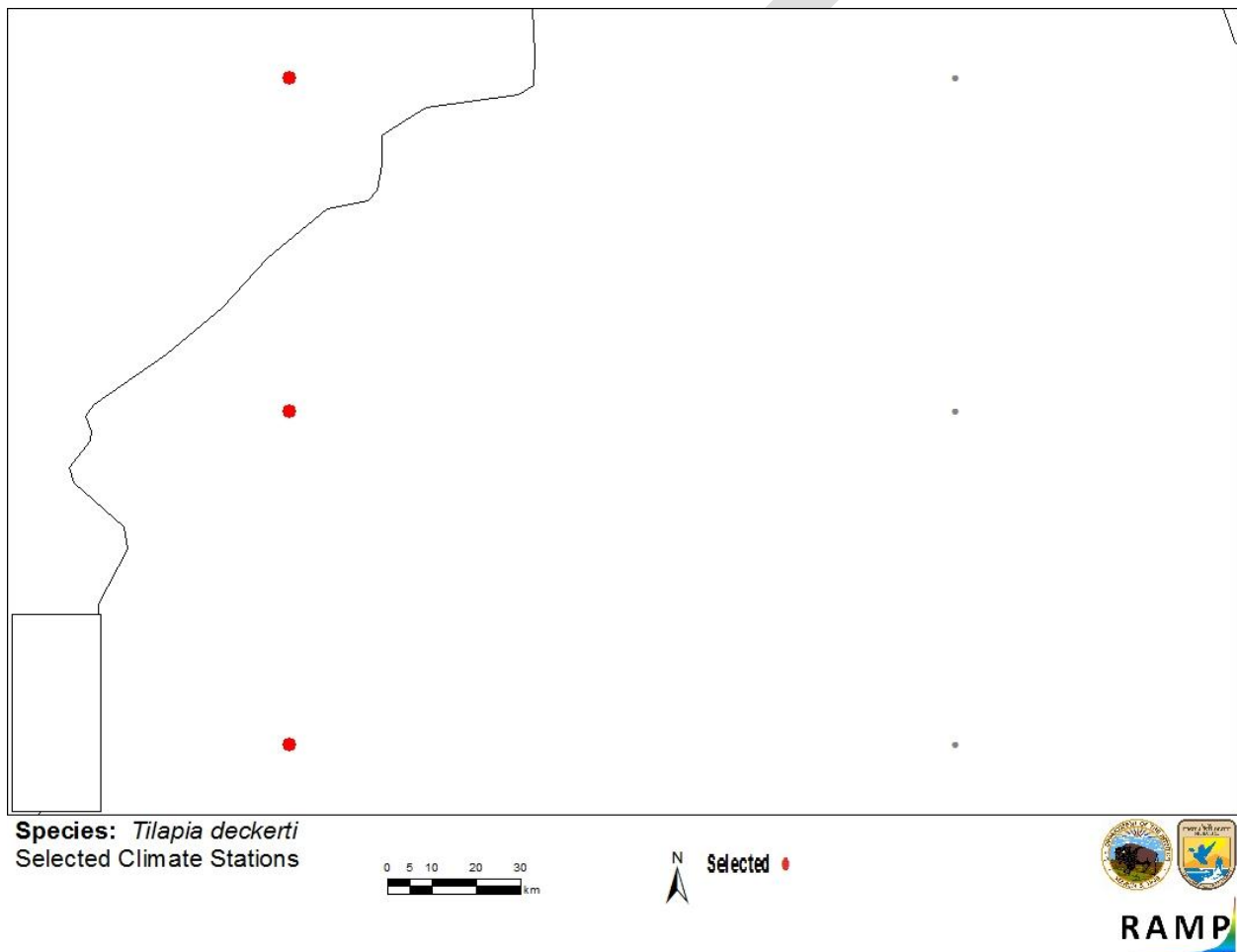


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *T. deckerti* climate matching. Source locations from GBIF (2015). All source locations are in Cameroon.

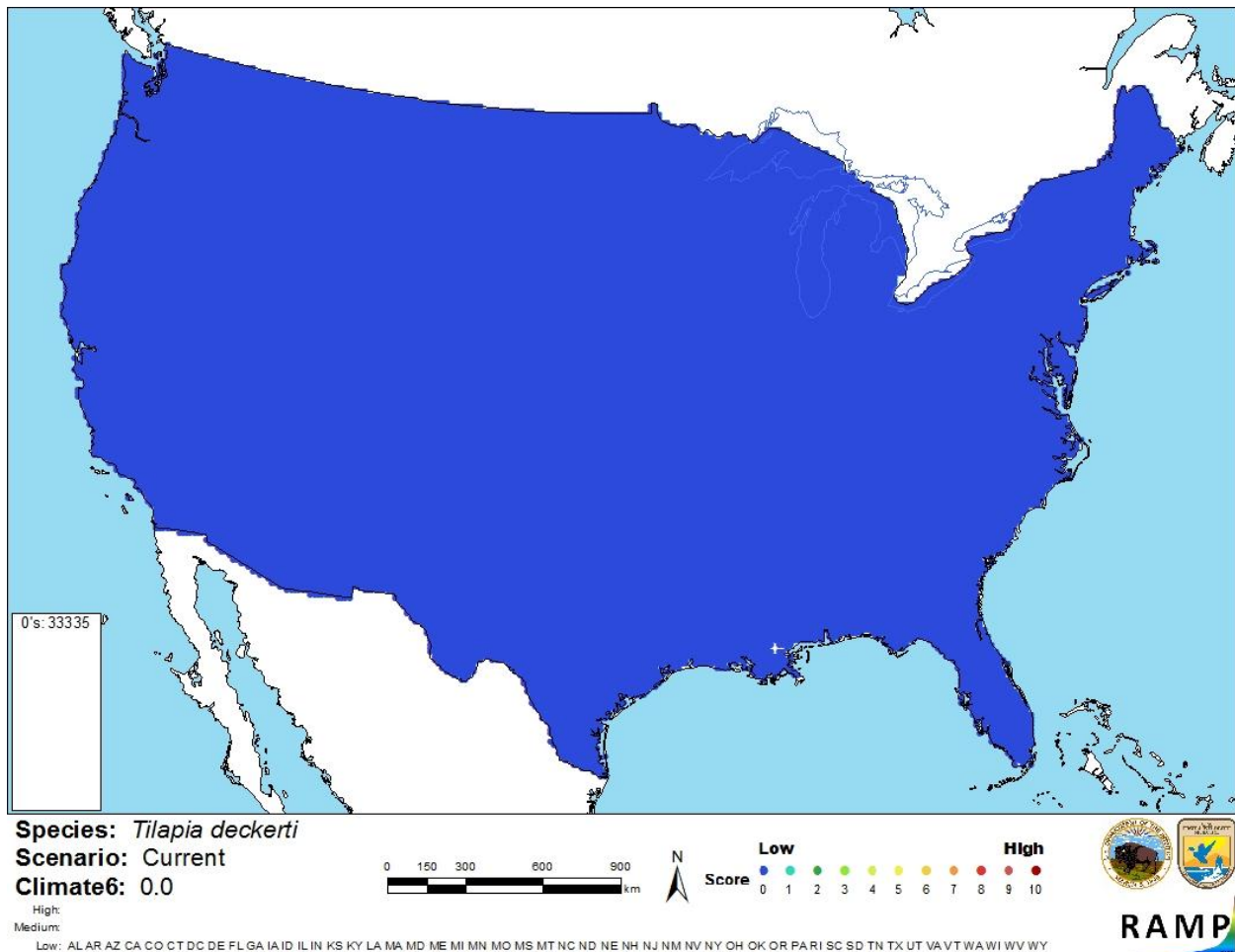


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *T. deckerti* in the continental United States based on source locations reported by GBIF (2015). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

7 Certainty of Assessment

Little information is available on the biology of *T. deckerti* and it has not become established outside its native range. The certainty of this assessment is high because the lack of information about this species precludes any assessment other than “uncertain” risk.

8 Risk Assessment

Summary of Risk to the Continental United States

Tilapia deckerti is endemic to Lake Ejagham in Cameroon, and has not been reported as introduced outside of this location. The species is, in fact, critically endangered in its native range due to deforestation and agriculture. Because *T. deckerti* has no history of invasion, it is currently impossible to know what impacts *T. deckerti* might have if introduced to the US. Climate match to the contiguous U.S. is low, but this may be an underestimate because environmental factors other than climate tolerance may be responsible for the restriction of the

species to a single lake. Tropical and sub-tropical areas of the U.S. may be suitable habitat for this tropical species. Overall risk of this species is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3):** Uncertain
- **Climate Match (Sec.6):** Low
- **Certainty of Assessment (Sec. 7):** High
- **Overall Risk Assessment Category: Uncertain**

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9 References

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

- Dunz, A. R., and U. K. Schliewen. 2010. Description of a *Tilapia (Coptodon)* species flock of Lake Ejagham (Cameroon), including a redescription of *Tilapia deckerti* Thys van den Audenaerde, 1967 (Perciformes, Cichlidae). *Spixiana* 33(2):251-280.
- Froese, R., and D. Pauly, editors. 2015. *Tilapia deckerti* Thys van den Audenaerde, 1967. FishBase. Available: <http://www.fishbase.org/summary/8914>. (June 2015).
- Global Biodiversity Information Facility (GBIF). 2015. GBIF backbone taxonomy: *Tilapia deckerti* Thys van den Audenaerde, 1967. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2370579>. (June 2015).
- Integrated Taxonomic Information System (ITIS). 2015. *Tilapia deckerti* Thys van den Audenaerde, 1967. Integrated Taxonomic Information System, Reston, Virginia. Available: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648965. (June 2015).
- Moelants, T. 2010. *Tilapia deckerti*. The IUCN Red List of Threatened Species, version 2015.2. Available: <http://www.iucnredlist.org/details/21897/0>. (June 2015).
- Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk Assessment Mapping Program: RAMP. US Fish and Wildlife Service.

10 References Quoted But Not Accessed

Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.

- Schliewen, U. K., K. Rassmann, M. Markmann, J. Markert, T. D. Kocher, and D. Tautz. 2001. Genetic and ecological divergence of a monophyletic cichlid species pair under fully sympatric conditions in Lake Ejagham, Cameroon. *Molecular Ecology* 10:1471-1488.
- Stiassny, M. L. J., A. Lamboj, D. De Weirtdt, and G. G. Teugels, 2008. Cichlidae. Pages 269-403 in M. L. J. Stiassny, G. G. Teugels, and C. D. Hopkins, editors. The fresh and brackish water fishes of Lower Guinea, West-Central Africa, volume 2. Coll. faune et flore tropicales 42. Institut de recherche de développement, Paris, France, Muséum national d'histoire naturelle, Paris, France and Musée royal de l'Afrique Central, Tervuren, Belgium.

Teugels, G. G., and D. F. E. Thys van den Audenaerde. 1991. *Tilapia*. Pages 482-508 in J. Daget, J.-P. Gosse, G. G. Teugels, and D. F. E. Thys van den Audenaerde, editors. Check-list of the freshwater fishes of Africa (CLOFFA), volume 4. ISNB, Brussels; MRAC, Tervuren; and ORSTOM, Paris.

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